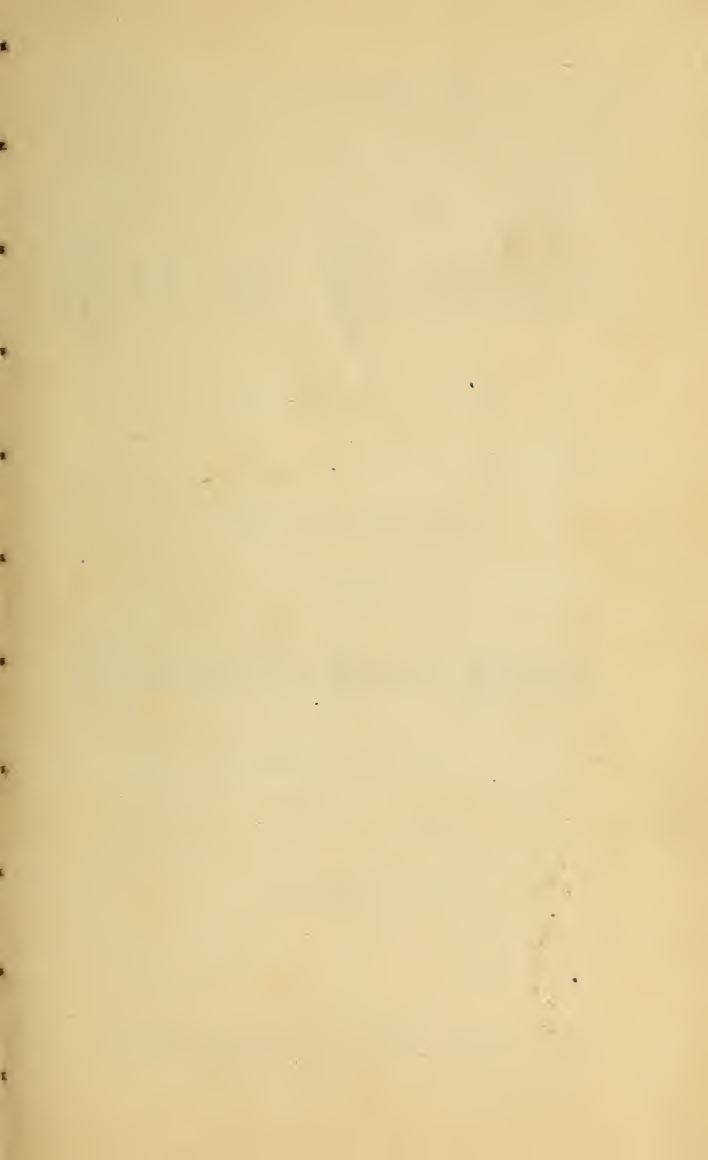


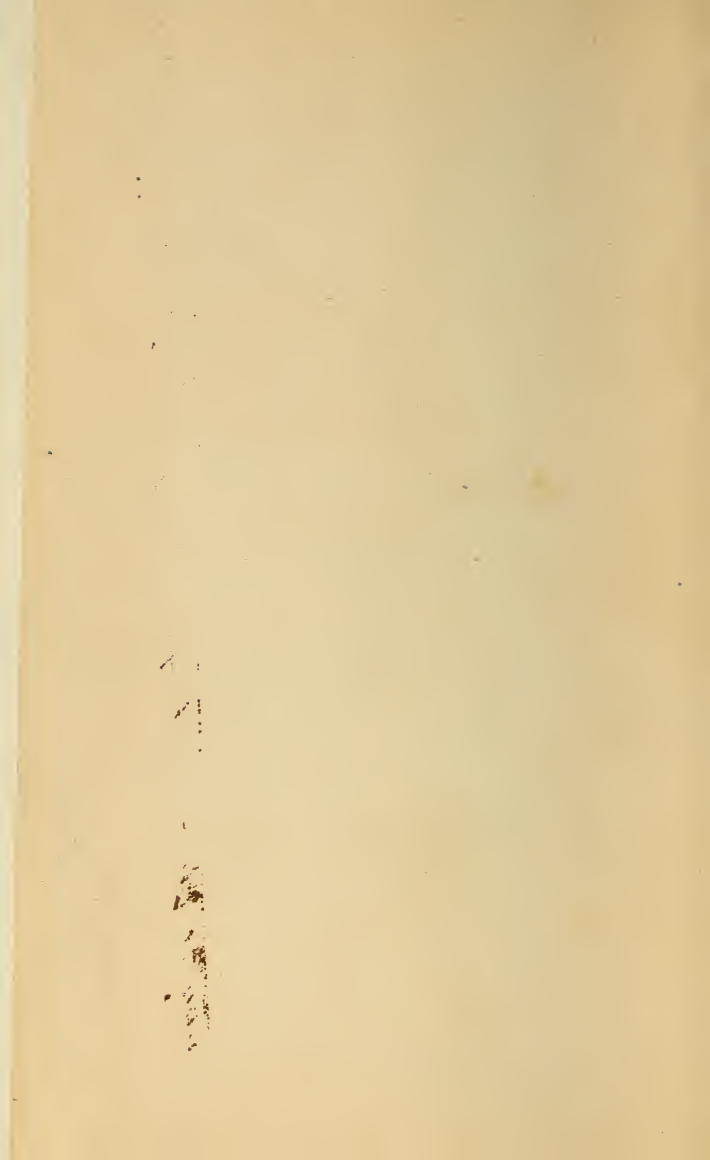
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HINTS

TO

Medical Examiners,

BY GEO. EMMET HALL, M. D.

PRESENTED

BY THE

Hahnemann Life Insurance Company,

CLEVELAND, O.

1871

CLEVELAND:

PRINTED AT THE OFFICE OF THE HAHNEMANNIAN.

1871.

HL 8888
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Entered according to Act of Congress, in the year of our Lord
1871, by the
HAHNEMANN LIFE INSURANCE COMPANY,
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TO

PROF. H. P. GATCHELL, M. D.,

OF OAK GROVE SANITARIUM, KENOSHA, WIS.,

AS

A MARK OF ESTEEM FOR HIS PRIVATE CHARACTER, DISTINGUISHED
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HOME OFFICE,

CASE BUILDING, - - CLEVELAND, O.

N O T E .

THE aim of this little pamphlet is to exhibit some of the more prominent features relating to Examinations for Life Insurance, and to suggest the necessity for *extreme care on the part of the physician in recommending risks.*

No attempt at instruction in physical, or other methods of diagnosis, is made, it being presumed that no one unless fully competent would assume the responsibilities of an Examiner.

EXAMINERS AND AGENTS.

WHILE the relations of the Medical Examiner with the Agent of the Company should, if possible, be of a friendly character, and the labors of both should be for the interests of the Company, no personal friendship or other motive will induce the conscientious Examiner to recommend any undesirable risk, no matter how much time and labor may have been expended by the Agent in securing the same. And he will bear in mind that he is a sentinel, selected to prevent the Company from becoming a hospital for the reception of invalids, be they strangers or friends, and that so long as he acts for the Company it will hold him strictly accountable for any risks accepted upon his recommendation which may eventually exhibit evident carelessness in the examination. The Company also expects the Examiner to consider its interests paramount to those of any of its Agents, and if at any time any facts should exist with reference to an examination, which in the opinion of the Examiner it would be best not to note on the Application, he should at once write to the Medical Examiner at the Home Office, giving full particulars of the case, which letter will be held as strictly confidential.

Examiners are earnestly invited to correspond with the Home Office in relation to any case coming before them for examination, which, in their opinion, may not be such as the Company could safely accept, and correspondence upon any subject that in any manner interests the Company will be acceptable and fully appreciated at all times.

APPLICANTS.

The Examiner will not fail to remember that the class of diseases with which he will most frequently meet in applicants for insurance will be of the chronic variety. Seldom will he be called upon to examine for insurance any individual while laboring under an acute malady. Those presenting themselves for examination will, if diseased, of course make the most favorable representation of their case possible, and will conceal and disguise any facts regarding their health which would tend to condemn them for insurance.

On the other hand, a patient applying to a physician for medical aid, is very anxious to inform his medical adviser of all his aches, pains and other symptoms, confiding to him every little particular that has the least bearing upon his case. In this he resembles the conscript who parades all his aches and pains before the army surgeon, that he may thereby escape military service. The motives of the three it will be observed, are quite different. Regarding those who occasionally present themselves for insurance without having been solicited by an agent of the company, suspicion may be very justly excited, for it is seldom that an individual applies for insurance upon his life, unless solicited, although it is common to apply for insurance upon property, and, where such cases occur, unusual care on the part of the Examiner should be exercised. Persons who are aware of the presence of some disease which will sooner or later prove fatal, or which is gradually undermining their health, and conscious that no provision has been made for those dependent upon them in the event of death, hasten to perform the neglected duty.

DUTIES OF THE EXAMINER.

IN examining applicants for Life Insurance it devolves upon the physician, in his official capacity, *to detect if disease actually exists, or if there be any tendency or predisposition to any disease which may, in the future, make the risk a hazardous one, for not only must the physician be able to testify to a sound and healthy condition of the candidate for insurance, at the time of the examination, but he should also be fully satisfied that the applicant stands a fair chance of reaching the age necessary to make the Company secure.* As but one class of risks is desired by this Company, a person to be insurable for a shorter term should be *good for life.* The success of any life insurance company rests, to a very great extent, with its Examiners, and too close scrutiny and investigation can not be practiced by the physician. The object to be attained is of course to establish whether the applicant will reach his expectancy of life. What that expectancy is can be readily seen by reference to the annexed table.

To establish certainly that in any given case the individual would reach the age specified in the table would be simply impossible, yet there is every reason to conclude that persons who have inherited good constitutions, who live temperately, in salubrious regions, and who are employed in occupations not calculated to impair the general health, will attain to a greater longevity than under other and less favorable cir-

cumstances. Very large or tall men do not possess the same endurance as men of medium stature, which fact was fully demonstrated during the war with Mexico and in the great rebellion.

EXPECTATION OF LIFE.

The following is according to the Carlisle Tables of Mortality.

Age.	Expectation in years and 100ths.	Age.	Expectation in years and 100ths.	Age.	Expectation in years and 100ths.
14	45.75	43	25.71	72	8.16
15	45.00	44	25.09	73	7.72
16	44.27	45	24.46	74	7.33
17	43.57	46	23.82	75	7.01
18	42.87	47	23.17	76	6.69
19	42.17	48	22.51	77	6.40
20	41.46	49	21.81	78	6.12
21	40.75	50	21.11	79	5.80
22	40.04	51	20.39	80	5.51
23	39.31	52	19.68	81	5.21
24	38.59	53	18.97	82	4.93
25	37.86	54	18.28	83	4.65
26	37.14	55	17.58	84	4.39
27	36.41	56	16.89	85	4.12
28	35.69	57	16.21	86	3.90
29	35.00	58	15.55	87	3.71
30	34.34	59	14.92	88	3.59
31	33.68	60	14.34	89	3.47
32	33.03	61	13.82	90	3.28
33	32.36	62	13.31	91	3.26
34	31.68	63	12.81	92	3.37
35	31.00	64	12.30	93	3.48
36	30.32	65	11.79	94	3.53
37	29.64	66	11.27	95	3.52
38	28.96	67	10.75	96	3.46
39	28.28	68	10.23	97	3.28
40	27.61	69	9.70	98	3.07
41	26.97	70	9.18	99	2.77
42	26.34	71	8.65	100	2.28

The following Table, taken from the New York *Underwriter*, gives the ratio of deaths, in England, from each cause, to 1,000,000 deaths from all causes.

Consumption,	118,003	Child Birth,	5,029
Bronchitis,	86,554	Epilepsy,	4,957
Atrophy and Debility,	69,284	Rheumatism,	4,837
Old Age,	61,414	Nephria,	4,723
Convulsions,	56,294	Syphilis,	3,641
Heart Disease,	46,499	Disease of Joints,	3,584
Pneumonia,	45,275	Peritonitis,	3,368
Diarrhoea,	42,559	Jaundice,	3,201
Typhus,	36,150	Erysipelas,	3,109
Scarlatina,	26,370	Suffocation, (accidents,) ...	2,899
Pertusis,	25,454	Mortification,	2,849
Paralysis,	23,175	Hepatitis,	2,823
Apoplexy,	22,309	Laryngitis,	2,755
Premature Birth,	19,272	Ileus,	2,528
Cancer,	18,320	Aphthæ,	2,493
Dropsy,	15,112	Accident, not specified,	2,393
Hydrocephalus,	15,095	Uterine disease,	2,291
Tabes Mesenterica,	14,754	Metria,	2,285
Fracture and Contusion, ..	14,141	Dysentery,	2,062
Rubeola,	14,124	Ulceration of Intestines, ...	1,990
Brain disease,	12,158	Hernia,	1,987
Liver disease,	11,859	Cholera,	1,977
Lung disease, not Phthisis, 10,	2,78	Pleurisy,	1,854
Croup,	9,405	Gastritis,	1,599
Cephalitis,	9,047	Ascites,	1,552
Asthma,	8,035	Diabetes,	1,458
Sud'n death, cause unk'wn	7,516	Insanity,	1,372
Disease of Stomach,	6,320	Influenza,	1,301
Scrofula,	6,299	Pericarditis,	1,269
Kidney disease,	6,260	Malformations,	1,081
Enteritis,	6,127	Aneurism,	1,078
Drowning, (accident,)	5,737	Hanging, (suicide,)	1,046
Burns & Scalds, (accid't,) .	5,574	Cyanosis,	1,031
Diphtheria,	5,574	Purpura and Scurvy,	1,010
Small Pox,	5,388	Uleer,	950

Nephritis,	948	Noma,	373
Phlegmon,	922	Worms,	369
Murder and Manslaughter, ..	840	Suicide, (not specified,)	300
Spina Bifida,	832	Poison, (suicide,)	289
Cystitis,	817	Gunshot, (accident,)	266
Gout,	808	Ague, Congestive,	259
Intemperance,	802	Privation,	234
Delirium Tremens,	791	Ischuria,	227
Skin Disease, not specified, ...	776	Zymotic, (not specified,)	225
Violent Deaths, not specified, ..	645	Cut or Stab, (accident,)	221
Introsusception,	635	Fistulæ,	214
Poison, (accident,)	602	Spleen, disease of,	199
Stricture of Intestines,	596	Remittent Fever,	184
Cut or Stab, (suicide,)	575	Arthritis,	161
Ovarian Dropsy,	530	Gun Shot, (suicide,)	122
Carbuncle,	504	Chorea,	107
Drowning, (suicide,)	489	Pancreas, disease of,	39
Stone,	431	Hanging, (execution,)	24
Quinsy,	431	Hydrophobia,	21
Stricture of Urethra,	422	Glanders,	9

OCCUPATION.

Every medical man is conversant with the fact that certain occupations are far more favorable to the attainment of a long life than others. Employments that are carried on in the open air, or at least where a large portion of the labor is performed out of doors, are of the class most conducive to good health and longevity. Quite a number of occupations are extremely pernicious to health, so much so that persons following them are positively unfit as insurance risks. Among the class referred to are: Glass blowers, miners, quartz-mill operators, workers in chemical manufactories, white lead and match factories, burr stone and grind stone works, brakemen on freight trains, also those employed in powder mills, or as pyrotechnists, (on account of extreme

hazard,) marble and stone cutters and carvers, plumbers and painters using and handling lead and turpentine, are poor risks, inhalations of stone and marble dust inducing lung disease, and the handling of lead and inhalations of lead and turpentine causing paralysis and colica pictonum. Machinists and mechanics generally are good risks, but the professional ranks afford the best. Clergymen, teachers, lawyers, artists, public speakers, professional lecturers and physicians, more particularly those who practice in cities, and farmers or agriculturists generally, are the best class from which to select.

It is a source of regret that statistical information of a thoroughly reliable character, exhibiting the influence of the manifold occupations upon longevity in this country, can not be obtained; every effort has been made but with indifferent success. The nearest approach to the desired knowledge is furnished by the State of Massachusetts, in the Twenty-Second Registration Report, showing the number and average age of all persons over twenty years old who have died during the period of nineteen years and eight months, ending December 31, 1863. For Life Insurance purposes this report must necessarily prove of little value, for very many of the averages have been made from a number less than one hundred persons of a specified occupation. To prove of any practical benefit the average age should be computed from a number of not less than one thousand individuals of a specified employment, and the larger the number from which the calculation is made the better.

In addition to the Massachusetts Registration Report, which is here presented, will also be found a table by Mons. Lombard, exhibiting the average age attained in France by persons following the occupations therein named. The aver-

ages are believed to have been computed from several thousands of persons of each employment mentioned. In the absence of anything more reliable it is appended, but as a guide for this country it should be accepted with caution.

OCCUPATION.	No. of Per- sons.	Av. Age.
All classes of occupations,.....	77,188	50.64
1. Cultivators of the earth,.....	19,252	64.13
2. Active mechanics abroad,.....	5,745	50.73
Brickmakers,.....	49	49.18
Carpenters,.....	3,202	50.93
Calkers and Gravers,.....	98	62.34
Masons,.....	801	49.07
Ship-Carpenters,.....	518	56.60
Stone-Cutters,.....	477	45.79
Tanners,.....	410	47.44
3 Active mechanics in shops,.....	7,025	47.99
Bakers,.....	254	45.08
Blacksmiths,.....	1,398	52.66
Brewers,.....	7	49.85
Card-makers,.....	26	46.04
Carriage-makers,.....	134	50.12
Chair-makers,.....	55	39.73
Confectioners,.....	35	40.63
Cooks,.....	47	40.89
Coopers,.....	545	55.80
Curriers,.....	52	45.23
Cutlers,.....	58	37.46
Distillers,.....	16	58.12
Dyers,.....	80	42.39
Founders,.....	145	42.00
Furnace-men,.....	56	39.18
Glass-blowers,.....	73	37.78
Hatters,.....	217	54.83
Leather-dressers,.....	83	45.00
Machinists,.....	933	39.94
Millers,.....	154	58.08
Musical Instrument makers,.....	9	36.11
Paper-makers,.....	151	46.47
Plumbers,.....	36	35.61
Potters,.....	23	57.52
Tallow-chandlers,.....	37	53.75
Tinsmiths,.....	191	39.93
Weavers,.....	207	44.99
Wheelwrights,.....	301	54.50
4. Inactive mechanics in shops,.....	8,867	42.68
Barbers,.....	184	42.05
Basket-makers,.....	89	61.62
Bookbinders,.....	67	37.57
Carvers of Stone and Marble. in doors,.....	30	30.87

OCCUPATION.	No. of Per- sons.	Av. Age.
4. Cigar-makers,	58	36.90
Clock (and watch) makers,	43	61.35
Engravers,	50	41.52
Jewellers,	233	39.44
Operatives,	815	37.63
Printers,	336	36.98
Shoemakers,	5,469	43.34
Tailors,	759	43.35
Tobacconists,	24	50.75
5. Laborers—no special trades,	14,733	45.93
Brakemen,	76	26.80
Drivers,	138	40.29
Laborers,	14,351	46.18
Workmen in powder-mills,	16	40.12
6. Factors laboring abroad,	2,920	37.36
Baggage-masters,	16	32.56
Butchers,	264	50.60
Firemen and Engineers,	192	36.74
Expressmen,	86	38.69
Lighthouse keepers,	8	57.37
Sextons,	30	56.83
Soldiers,	1,230	28.96
Stablers,	165	41.57
Teamsters,	530	40.45
Weighers and Gaugers,	724	60.33
7. Employed on the ocean,	5,020	45.67
Fishermen,	79	47.09
Marines,	1	58.00
Naval Officers,	20	53.15
Pilots,	43	60.46
Seamen,	4,927	45.48
8. Merchants, Financiers, Agents, etc.,	7,272	47.92
Bankers,	3	58.68
Bank officers,	67	54.45
Brokers,	73	51.45
Clerks,	1,293	33.39
Druggists,	105	39.60
Gentlemen,	787	64.61
Grocers,	192	48.31
Manufacturers,	652	47.62
Merchants,	1,913	52.70
Railroad Conductors and Agents	131	38.54
Traders,	1,521	46.81
9. Professional men,	2,679	50.24
Artists,	66	48.70
Civil Engineers,	55	41.91
Clergymen,	472	59.25
Comedians,	79	41.63
Dentists,	52	39.33
Editors,	35	45.37
Judges and Justices,	9	63.11
Lawyers,	374	56.11
Musicians,	126	40.66

OCCUPATION.		No. of Per- sons.	Av. Age.
9. Physicians,.....		675	55.86
Professors,.....		22	55.81
Public Officers,.....		250	53.81
Surveyors,.....		55	48.00
Teachers,.....		312	38.71
10. Females,.....		3,625	46.13
Domestics,.....		303	47.21
Dressmakers,.....		118	41.75
Housekeepers,.....		2,264	50.11
Milliners,.....		65	39.03
Nurses,.....		41	60.90
Operatives,.....		413	28.23
Seamstresses,.....		139	44.19
Shoe-Binders,.....		33	41.79
Straw-Braiders,.....		28	37.28
Tailoresses,.....		119	43.13
Teachers,.....		129	29.12

Below will be found the Table of Mons. Lombard, showing the average age attained, in France, by persons employed in the different occupations mentioned.

OCCUPATION.	AV. AGE	OCCUPATION.	AV. AGE
Stone Cutter,.....	34	Philosopher,.....	59
Miller and Baker,.....	42	Gardner,.....	60
Painter, ordinary,.....	44	Statesman,.....	61
Carpenter and Joiner,.....	49	Merchant,.....	62
Sawyer,.....	51	Clergyman,.....	63
Butcher,.....	53	Musician,.....	63
Surgeon,.....	54	Sculptor,.....	63
Mason and Bricklayer,.....	55	Magistrate,.....	69
Poet,.....	55		

TEMPERAMENT.

It has been observed that the temperament of an individual affords, to a certain extent, the key to a knowledge of the class of diseases to which he would be most liable, and consequently it is always desirable that the temperament of the applicant for insurance be carefully noted.

Four temperaments, the *Bilious*, *Nervous*, *Sanguine* and the *Lymphatic*, with the combinations, *Bilious-Lymphatic*, *Nervo-Sanguine*, etc., constituting the *mixed* temperaments, are all that is essential to observe for insurance purposes.

The tendency to paralysis, epilepsy, insanity and nervous diseases generally, would of course characterize the *Nervous Temperament*, while the *Sanguine Temperament* would predispose its possessor to cardiac lesions, hæmorrhages, fevers of an inflammatory type, acute rheumatism, congestions, etc. The *Lymphatic* or *Phlegmatic* predisposes to chronic maladies, debility, tubercular, scrofulous and dropsical affections. A fair complexion, pallid skin, languid circulation, softness of the muscles, and torpidity of the bodily and mental functions, characterizes this temperament.

The *Bilious Temperament* will be recognized in individuals possessing a dark complexion, dark hair and eyes, firm flesh, energetic thought and action, and inclines the possessor to dyspepsia, hypochondriasis, and general disordered hepatic action.

GENERAL REMARKS.

It may here be well to remark that Examiners for Life Insurance are not required, as a general practice, to make a nice differential diagnosis defining the character of any organic lesion which may be discovered in an applicant. The physician is merely expected to ascertain if a lesion exist in any organ of which *the integrity is essential to good health*. It is not important that the Examiner should state whether a paralysis is due to apoplexy, mollities cerebri, or what other cause, the presence of the lesion prevents a possibility of insurance, and, consequently, a knowledge of its cause is not material. When, upon examination, it is learned

that the applicant is *free from disease*, it is expected that the Examiner will furnish an intelligent opinion as to the probable duration of applicant's health and life, *i. e.*, give the Company a *reasonable guaranty* that he will fulfil or go beyond his "expectation of life," aside from any fatal result from accident, poison, epidemic, or infectious disease, which of course can not be foreseen. This opinion will be derived from a careful consideration of the family record, together with the inspection of the applicant. Further, the diathesis and temperament require particular attention, the first as exhibiting the individuals *predisposition* to certain diseases rather than others, as for instance, the *cancerous*, *scrofulous*, *rheumatic* or *calculous* diathesis and the temperament as indicating the diseases to which he would probably be subject, aside from diathetic influences. When a *tendency* to a disease is observed in an applicant who is at present in good health, the Examiner, before recommending the risk, should consider whether this tendency to disease will become early kindled into a fatal malady or remain latent throughout a long life, and this greatly depends upon influences of climate and occupation.

The tendency to hepatic disease would be manifestly increased in a dry warm climate, while a cool moist region would exert a restraining influence and keep in subjection the predisposition. An indoor sedentary occupation would also prove prejudicial. Persons exhibiting tendencies to strumous and tubercular diseases would perhaps attain to advanced age in an atmosphere warm and dry, but would almost surely succumb to that of a bleak, damp, chilly air. Frequently the Examiner will meet with robust but short lived applicants, who, although yet in vigorous health, can not be safely accepted, on account of family history and the

personal surroundings pointing to a brief existence. On the other hand, persons are often observed apparently of delicate frame and weakly constitution, who are descendants of a race noted for *length of life*. Such an applicant, *if* free from disease and with a good family record, could safely be accepted, notwithstanding delicacy of frame and constitution, while in the case of the robust person above cited the risk would be too great for the Company to incur. Long lived persons are always the ones desired.

Paucity of evidence in the family history should lead to extra care in the personal examination of the applicant.

PERSONS UNDER MEDICAL TREATMENT.

No applicant while under medical treatment will be accepted. Persons recovering from attacks of acute diseases must be fully restored to their usual state of health before examination for insurance.

CORRECT ANSWERS.

Be sure to answer all questions correctly, giving *full and decided answers*, YES or NO, as the case may be. Applications are frequently returned to Examiners for correction, which is a source of delay, expense and annoyance to the Company. If any disease has occurred, give the facts precisely, avoiding such phrases as "urinary trouble," "kidney difficulty," "throat disorder," "complication," etc. Terms which being too vague to convey any precise information produce an unfavorable impression as to the risk being a desirable one.

In all cases where the Medical Examiner and the physician to the party applying for insurance are identical, the blank headed "Questions to be answered by the physician

of the party applying for insurance," should be filled out by the Examiner.

PREVIOUS REJECTION.

In case the application of a person to be examined states that the party has been rejected by some Company, learn if possible the cause of rejection and note if the cause still exists. Occasionally persons are declined for diseases which existed at the time of making application but subsequently disappeared, or an error in diagnosis on the part of the former Examiner may have been the cause of the Company declining the risk.

METHOD OF EXAMINATION.

IT is desirable to have some regular system or method of procedure in conducting an examination, for example, taking first the pulse rate standing and sitting, then exploring the chest, after which take the chest mensuration, etc. The acts of inspiration and expiration will cause the pulse to become accelerated, hence the reason for taking the pulse rate before examining the thorax.

Observe that the individual to be examined is identical with the one whose name is written in the application by the Agent. See that the name and residence correspond. Errors have occurred and fraud has been perpetrated by designing parties and applications written on invalid lives, persons in health being presented for examination.

The certificate of examination *must in all cases be in the hand writing of the Medical Examiner*. To his signature should be affixed his college degree, as well as a specification of the place at which he, as an Examiner is located.

SUPERFICIAL EXAMINATIONS.

Applicants should *not be hastily examined*. Sufficient time should be given to each case presented for a careful and searching examination. Observations hastily made must necessarily prove unreliable, and are, to say the least, super-

ficial and unsatisfactory. The Company expects the Examiner to exert his best skill in its behalf. He is remunerated with a liberal fee, whether the applicant is accepted by the Company or not. Very many individuals fear an examination and become excited, causing the pulse to vary much from its accustomed rate. In such cases remarks of a pleasant character from the Examiner, extraneous to the business in hand, will have a tendency to calm the fears and restore the pulse to a more natural condition. Should this or some other method fail, the examination had better be *postponed* until a more favorable time. Deprivation of accustomed sleep, excitement incident to business, a full stomach, or a very rapid walk to the office of the Examiner will in many persons cause similar conditions of the pulse.

THE PULSE.

The pulse requires very close observation and attention as to its character, and all variations from a perfectly healthy standard should be fully noted. In the Eastern States the pulse rate of an adult in good health ranges from 70 to 75 per minute, while in the North-Western States it averages more, being from 75 to 80. A difference of from four to ten beats per minute is observable in the pulse rate between the standing and sitting positions, and it is very seldom that less than three beats is found, yet Examiners frequently report the rate the same for the two positions, which must be the result of guessing rather than observation.

This Company does not accept applicants under the age of fourteen years. The rate of the pulse at the age of puberty should not vary much from 85 to 90. Below these figures Examiners sometimes report the pulse, which would, in a large proportion of cases, indicate carelessness on the part

of the physician, or a diseased and unhealthful condition of the applicant. The annexed table may be considered in the main correct.

Pulse at birth,	130 to 140
" During infancy,	120 to 130
" In childhood,	100
" Of youth,	85 to 90
" Of adult male,	70 to 75
" Of adult female,	75 to 80
" Of old age,	65 to 70

When the pulse is habitually or temporarily below 58 sitting, or above 88 standing, it will prove a cause for rejection, unless explained as a personal peculiarity or idiosyncrasy. An irregular pulse also rejects, unless explained as peculiar to the applicant. The intermittent pulse most authorities assert to be indicative of cardiac lesion or brain disease, but not always. Excessive use of tobacco has also produced it in some instances. Intermission, due to valvular defect, may disappear temporarily from acceleration of the pulse by exercise, emotion, etc.

CHEST MENSURATION.

Chest measurement should be made with an ordinary tape line, over the nipples and under the inferior angles of the scapulæ, and over but a single flannel garment, *during full inspiration and forced expiration*. The average size of the chest of healthy adult males, when as free from air as possible, varies from thirty-two to thirty-four inches; the average expansion is from two to four inches. An adult applicant exhibiting a less expansion than two inches it would not be safe to accept. In cases where the expansion is slight, a few

moments devoted to repeated trials will elicit, by practice, a marked improvement, most persons being ignorant concerning the full inflation of their lungs.

The annexed table gives the proper weight and chest expansion to height, and the more closely an applicant approximates to this standard the better the risk, other things being equal.

HEIGHT TO WEIGHT AND MEASUREMENT OF CHEST.

Height.	Weight.	Chest.	Height.	Weight.	Chest.
5 ft. 1 inch.	120 lbs.	34.06 in.	5 ft. 7 inch.	145 lbs.	38.16 in.
5 " 2 "	125 "	35.13 "	5 " 8 "	148 "	38.53 "
5 " 3 "	130 "	35.70 "	5 " 9 "	155 "	39.10 "
5 " 4 "	135 "	36.26 "	5 " 10 "	160 "	39.66 "
5 " 5 "	140 "	36.83 "	5 " 11 "	165 "	40.23 "
5 " 6 "	143 "	37.50 "	6 " 0 "	170 "	40.80 "

Of course this standard must necessarily be departed from in some instances, and the applicant yet prove a desirable risk. The above table of height, weight and chest measurement is the one used in England and also by the Companies of this country.

The propriety of using this table, as a standard for Americans, has been questioned by several medical men, upon the supposition that the *physique* of Europeans is greatly in excess of that of the native male population of this country. This view is erroneous. A considerable proportion of the native born insured lives in the United States claim foreign parentage, in some instances one and in others both parents are of foreign birth. Between this class and those of foreign birth, as well as natives of this country whose parents were also born here, but little if any appreciable difference exists upon the average.

In evidence of this the remarks of Dr. Fish, of New York city, are of interest: "A New York surgeon examined 8,700

recruits for the United States Army, of whom 4,538 were Americans, 1,694 Irish, 1,453 Germans, 315 English and Scotch, 135 French and 545 belonging to twenty-six other nations. He made a strict examination, to determine whether there was any foundation for the frequent affirmation of the English journals that the physical man in America was deteriorating. The Americans in New York city were, of course, not above the average of American *physique*, yet his examination puts them ahead. In stature the American born ranks the highest, the English next, the Irish next, the Germans next and the French last. In regard to their physical conformation, he divided the recruits into four classes, and found the American to possess the highest rate of prime *physique*. Of American born recruits 47.5 per cent. had a prime *physique*, the Germans 40.75 per cent., and the Irish 35 per cent. He arrived at the conclusion that no race can show a larger proportion of osseous and muscular development than the American."

THE RESPIRATORY ORGANS.

The ratio of respirations to pulsation is as one to four and five in healthy adults, and any marked deviation from this rule should excite particular attention on the part of the Examiner. The following table will prove instructive:

QUETELET'S TABLE.

AGE.	INSPIRATION.		
	AV.	MAX.	MIN.
At Birth,.....	44	70	23
At 5 Years,.....	26	32	..
From 15 to 20 Years,.....	20	24	16
From 20 to 24 Years,.....	18.7	24	14
From 25 to 30 Years,.....	16	21	15
From 30 to 50 Years,.....	18.1	23	11

The lungs require always a very careful inspection, and particularly should a searching examination be made in cases where the family history exhibits hereditary tendencies to phthisis, for often in persons apparently the "picture of health" this insidious disease lurks, awaiting only a favorable opportunity to show itself. Persons in advanced stages of this malady seldom seek insurance.

With reference to the hereditary transmission of phthisis or insanity, it has been observed that the mother more readily transmits these diseases than the father, and an answer to the question, "Which parent does the applicant most resemble in temperament?" is very important where a parent has died of consumption or other hereditary disease. Carefully observe whether any predisposition exists in the applicant to the disease of which either parent may have died.

The fact that the greater part of the losses annually paid by Life Insurance Companies is from death by consumption, shows that the greatest care is necessary on the part of Examiners in recommending risks. Apoplexy and disease of the heart also form a large proportion of the causes of death upon which losses are paid. The experience of nearly all companies prove that the greatest number of deaths from above causes result in the space of from two to five years after insurance is effected, thus establishing the fact that the disease in an incipient state, or at least a strong predisposition to the malady which eventually proved fatal, existed in the applicant at the time of the medical examination.

BRONCHITIS, EMPHYSEMA AND ASTHMA.

The existence of either bronchitis or emphysema is a cause for rejection. Asthma—which in a general sense is understood to mean a spasmodic contraction of the circular mus

cular fibres of the bronchial tubes—is very *rarely* simply nervous in its origin, and but a very small proportion of the cases presenting themselves to the Examiner can be safely accepted. The idea so commonly received that asthmatics seldom die of phthisis, has led some physicians to look favorably upon such cases and recommend them for insurance, overlooking, it would seem, the fact that the presence of asthma often indicates the existence of *an organic lesion of the heart, brain, medulla oblongata, or lungs*, and is also frequently associated with some degree of bronchial inflammation. It has been observed that asthmatic attacks may both cause and be the result of heart disease, and, in the case of females, is often diagnostic of uterine affections. Subjects of asthmatic attacks should receive a rigid examination, with a view of ascertaining the source, the Examiner recollecting that emphysema is sometimes associated with asthma as a cause. Asthmatic applicants are *second class* risks, and, if recommended by the Examiner, it should be upon some *short endowment* plan. These remarks have reference only to the most favorable cases of asthma. In brief, this Company does not want asthmatics of any kind.

But slight difficulty arises in detecting acute bronchitis, and the Examiner will seldom meet with the disease in this form; but cases of the chronic variety will often present themselves, and, as is known to every medical man, are not so readily diagnosed, particularly if it should chance to be at a season of the year when the characteristic symptoms of this disease are comparatively quiescent, as during the summer months, or a case where the symptoms are not very marked. Many victims of chronic bronchitis are quite free from suffering throughout the warm season, experiencing distress only upon the approach of winter and during the

spring months. Persons past the middle period of life are as a general rule the most liable to the affection, and the majority of cases of "winter cough," to which very many individuals are subject at this time of life, is the result of bronchial inflammation of a low, lingering type.

Not only may danger be apprehended from bronchitis even when uncomplicated, but additional importance should be attached to the disease from the fact that it is often symptomatic of the tuberculous diathesis as well as frequently being associated with disease of the heart. Occasionally it can be traced to syphilis, and according to standard authorities is complicated with Bright's disease in seven-eighths of the cases of that affection.

The type of bronchitis known as *capillary*, or where the finer tubes are affected, is chiefly observed among children or adults of advanced age, and in the latter is often associated with an emphysematous condition of the lungs. Subcrepitant or sibilant rales with marked dyspnoea are prominent symptoms. The Examiner will not often meet with this variety of the disease.

CONSUMPTION OF THE LUNGS.

This, like other diseases, is most likely to occur when it has existed in the ancestry. Careful investigation should therefore always be made as to the health of the applicant's parents and grand parents, if living, as well as to the *cause* of death if deceased. But it will be remembered *that this disease is largely due to climatic influences, especially to dampness of soil and atmosphere.* This fact explains the excessive mortality from phthisis in certain sections and regions of country over and above that of other sections.

Where the family record of an applicant states that either

parent has died of "acquired consumption," the Examiner should be very particular to learn from the applicant, or other source, as to duration of the disease, under what conditions manifested, etc., and from information thus elicited, satisfy himself with regard to the true character of the malady. It is very probable that consumption, in common with some other diseases, may be acquired. Habits of life, unhealthful occupation and climate may conduce to the acquisition. That the influence of climate is more marked in consumption than in rheumatism, is apparent to all medical men. A consumptive tendency may be hereditary, either because the ancestors were consumptive, or because they transmitted some feeble state that favored the influence of climate or habits of life.

Many applications are received where the family record attributes the mother's death to "childbirth." Very many cases thus reported are, in reality, the result of phthisis, as further investigation has proved. It is well known to medical men that females who are victims of lung disease frequently conceive and carry children until full term, (the general health being much improved for the time being,) and at, or shortly after, confinement succumb to the lung disease.

SPITTING OF BLOOD.

The attention of Examiners is particularly called to applicants who may have at any time suffered from a loss of blood, expectorated or vomited. In such cases it is absolutely essential that full particulars as to number of attacks, age at which they occurred, and, if a female, whether in the Examiner's opinion the hæmorrhage was due to vicarious menstruation, (*Deviation des Regles.*) Learn if the blood came

from the lungs (hæmoptysis,) or stomach, (hæmatemesis,) or from the mouth, (bleeding gums,) or nasal cavities. In a large proportion of cases where the blood *coughed up* is bright in color, at times frothy and preceded by a saline taste, it would be considered symptomatic of grave lung disease. Hæmoptysis occurring in persons under twenty-five or thirty years of age would indicate phthisis, and is a well known precursor of that malady. Hæmorrhage from the lungs, occurring between the ages of thirty and forty, would point to probable cardiac lesion, to wit: Mitral disease, hypertrophy and dilatation of the left ventricle, also to disease of the larger vessels of the chest. In *pneumonia* it sometimes occurs, but where an applicant has recovered from the pneumonia and possesses a good family record, it will not prove a barrier to insurance, unless he has had three severe attacks of this disease, under which circumstance the risk should be declined. Where hæmatemesis, or *vomiting of blood*, has occurred, and *positive* evidence is produced that it was not in consequence of malignant or other diseased condition of the stomach, it will not prove objectionable, if the family history is good and the applicant in sound health. However, since there is usually difficulty in gaining positive information regarding the source of the blood discharged, it is safest to decline such applicants.

ORGANS OF CIRCULATION.

The organs of circulation demand careful attention. Observe whether the heart occupies its normal position. Notice whether there is any intermission or irregularity in the beat, if gentle or violent, and whether the impulse against the chest is coincident with the first sound. Abnormal heart sounds in persons subject to repeated attacks of inflamma-

tory rheumatism are common. Dilatation, hypertrophy and the various valvular diseases to which the heart is liable, will not escape the attention of the skillful Examiner. All cardiac lesions and deviations from the normal standard should be reported in the examination forwarded to the General Office of the Company.

In cases where there is doubt regarding the heart being in a perfectly normal condition, advise violent exercise for a few moments, running rapidly about an apartment or up a flight of stairs will enable the Examiner to decide if any disease exist. Cases of functional cardiac disturbance due to the use of tobacco, or cases of excessive impulse or other deranged action of the heart, due to enervation, the result of onanism, sexual excesses, anæmia, or whatever cause, must be first remedied by proper treatment before insurance can be effected.

A considerable proportion of deaths resulting from disease of the heart occur suddenly, and without any premonitory signs, outside of what would most probably be revealed by a careful examination of the organ by a competent medical man. To all external appearance there is in many instances nothing to indicate any departure from a condition of sound health, and yet, Companies are frequently called upon to settle losses the result of death from "heart disease" which, so far as the records of the Company show, was never diagnosed during life, or, at least, never reported if known to the Examiner, but which is abundantly proven to exist by an autopsy. This simply suggests the necessity for extreme care in examining applicants and recommending them for insurance.

The annexed table, indicating lesions of the lungs, may be of use in some cases:

TABLE INDICATING PULMONARY DISEASES.

SOUNDS OBSERVED.	DISEASE ASSOCIATED WITH.	RELATIVE TO INSPIRATION AND EXPIRATION.
Mucous rale.	Secondary bronchitis with secretion.	With either or with both acts.
Sibilant rale.	Capillary Bronchitis.	With either or both. Oftener with inspiration.
Sonorous rale.	Primary Bronchitis.	With either or both. Oftener with expiration.
Cavernous.	Tuberculous excavations. Vomica from abscess.	With either or both. More frequently with inspiration.
Crepitant rale.	Pneumonia.	Exclusively with inspiration.
Sub-Crepitant rale.	Pneumonia. Period of resolution.	With either or both acts.
Humid crackling.	Softening in tubercle.	More distinct in inspiration.
Dry crackling.	Early stage of Phthisis.	Exclusively with inspiration.

The mucous, sibilant, sonorous, crepitant and sub-crepitant rales, when limited to a small space at the summit of the chest, indicate tuberculosis.

ANEURISM OR OTHER TUMORS.

Aneurism or other tumors, if they exist and are sufficiently advanced, will manifest their presence by such disturbance of the respiratory organs and circulation as scarcely to fail in attracting immediate attention.

When examining those who have passed the middle period of life, the thoughtful physician will recollect the tendency to fatty degeneration in the muscles of the heart, and in the coats of the great vessels causing aneurisms, and in those of

the brain tending to apoplexy. The presence of the *arcus senilis* (in the eye indicating, at least, fatty degeneration of the edge of the cornea,) renders some or all of these conditions probable. Yet, it will be remembered that its absence furnishes no aid in diagnosis, for it is sometimes not exhibited even in extensive and fatal internal fatty degeneration.

DISEASES OF THE BRAIN.

Diseases of the brain and spinal cord, both functional and organic, insanity, ramollissement, atrophy, chronic meningitis, apoplexy, paralysis and the long train of morbid brain symptoms, due to the excessive use of opium, tobacco, "hash-eesh," etc., will, of course, be detected, and prove a cause for rejection at all times.

INTEMPERANCE.

The series of morbid phenomena produced by the excessive use of alcoholic drinks, (*Alcoholismus*,) so frequently encountered among men in every grade of society, will not escape proper attention. No one will write himself down an inebriate, yet there must be a beginning somewhere, and the medical man is asked the question direct.

Reformed inebriates are not acceptable risks, the continued use of alcohol leaving in its wake effects which long periods of complete sobriety fail to remove. Undoubted hereditary tendencies exist with reference to the transmission of the morbid appetite for intoxicating drinks, and "atavism" in intemperate families is as frequently observed as in families afflicted with phthisis pulmonalis, or insanity.

Individuals who indulge in occasional "sprees" come decidedly under the head of intemperate, notwithstanding there may be intervals of temporary sobriety, and this class,

as well as the confirmed drinker, must be declined. The same holds good with persons who habitually indulge in the use of opium, morphine, cannabis indica, or any other unnatural stimulant.

URINARY ORGANS.

The condition of the urinary organs demand very particular attention. Permanent strictures, enlarged prostate, and the presence of calculi seriously compromise the functions and structure of the bladder, which, in turn, leads to fatal disorganization of the kidneys. If pain of a persistent character has existed or exists in the region of the kidneys, accompanied with a puffy or slightly oedematous condition of the face, the urine should at once be subjected to an examination and the proper test applied. Morbus Brightii is insidious in its approach, an albuminous condition of the urine and occasional pain (sometimes no pain,) or uneasiness in the region of the kidneys, frequently mark the invasion of this fatal malady. In all cases of excessive urination the urine should likewise be subjected to analysis and if the presence of saccharine matter is detected, the applicant must be declined. The specific gravity of the urine can readily be obtained by an ordinary urinometer. By comparing the number on the stem to which the instrument sinks with the corresponding number in the annexed table, it will at once be apparent how much the specimen varies from a normal standard.

If, after boiling in a test tube, the urine becomes turbid and does not clear up on the addition of a few drops of nitric acid, and the specific gravity comes within the limits of Bright's disease, the risk cannot of course be accepted.

The tests for diabetic urine are many; perhaps *Trommer's*

Test is as accurate as any. It may be applied by adding a drop or two of a solution of sulphate of copper to the suspected fluid in a test tube. Liquor potassæ is then added in excess and the mixture boiled. If the proper proportions have been observed a red deposit of the suboxide of copper is precipitated if there be sugar present.

SPECIFIC GRAVITY	FLUIDS EXAMINED.	
1000	Distilled water.	
1005 } 1010 } 1015 }	Average in Bright's disease, May go as low as	1013 1004
1020 } 1025 }	Average limits of healthy urine.	
1030 } 1035 } 1040 } 1045 } 1050 } 1055 } 1060 }	Limits of diabetic urine. Average,	 1040

USE OF THE SPIROMETER.

In England and also upon the continent Dr. Hutchinson's Spirometer, or instruments of equal merit by other makers, are in use among the Examiners of some of the leading Life Companies, and are reported as assisting very materially in establishing the degree of *vital capacity* of candidates for insurance. The spirometer, it will be remembered, is an instrument for measuring the *volume of air expired from the lungs*, and in the absence of such instruments among Examiners in this country, the remarks of the distinguished Dr. Tilbury Fox, of London, with tables compiled by Dr. Hutchinson will prove interesting. Dr Fox says:

"The vital capacity volume is affected by height, by attitude, by weight, by age, and by disease.

"THE VITAL CAPACITY AS AFFECTED BY HEIGHT.

From a very large number of experiments, Dr. Hutchinson has deduced the curious fact that the height of an individual is the chief condition which regulates his vital capacity, and he lays down the following rule: That in the erect position, for every inch of stature from five to six feet, eight additional cubic inches of air, 60° Fahr., are given out in one volume, by the deepest expiration, immediately following the deepest inspiration. This table is intended to show the capacity in health and in the three stages of phthisis.

Height.		Capacity in Health.	Capacity in Phthisis Pulmonalis.		
Ft. In.	Ft. In.		1st Stage. Cub. In.	2d Stage. Cub. In.	3d Stage. Cub. In.
5	0 to 5	1	117	99	82
5	1 " 5	2	122	102	86
5	2 " 5	3	127	108	89
5	3 " 5	4	133	113	93
5	4 " 5	5	138	117	97
5	5 " 5	6	143	122	100
5	6 " 5	7	149	127	104
5	7 " 5	8	154	131	108
5	8 " 5	9	159	136	112
5	9 " 5	10	165	140	116
5	10 " 5	11	170	145	119
5	11 " 6	0	176	149	123

"This reads thus: A man between 5 ft. 7 in. and 5 ft. 8 in. in height, should be able to breathe, in health, 230 cubic inches; in the first stage of consumption this will be reduced to 154; in the second to 131; and in the third to 108 cubic inches. A knowledge of these facts on the part of the practitioner is of importance in reference to the examinations of

persons assuring their lives, in guiding him in doubtful cases.

“WEIGHT AS AFFECTING THE VITAL CAPACITY.

“In examining diseases of the lungs, the indications afforded by the weight of the individual are invaluable. One of the first signs of disease, generally, is loss of weight; a steady loss always precedes consumption, and is the earliest symptom of tubercular disease. Dr. Hutchinson has observed, that a slow and gradual loss is more serious than a rapid and irregular diminution. A person may lose weight, but he cannot do this gradually without some severe exciting cause.

“Weight in excess begins mechanically to diminish the breathing movements when it has increased to 7 per cent. beyond the mean weight; and from this point the vital capacity decreases 1 cubic inch per lb. for the next 35 lbs. The ordinary weight increases with the height, probably about $6\frac{1}{2}$ lbs. per inch of stature. It is unnecessary, however, to make the correction for weight, unless it be much in excess. From an examination of 2650 healthy men at the middle period of life, Dr. Hutchinson has deduced the following table:

Exact Stature.		Mean Weight.		Weight increased by 7 per cent.		
Ft.	In.	St.	lbs.	lbs.	St.	lbs.
5	1	8	8	or 120	9	2 or 128
5	2	9	0	“ 126	9	9 “ 135
5	3	9	7	“ 133	10	2 “ 142
5	4	9	13	“ 139	10	9 “ 149
5	5	10	2	“ 142	10	12 “ 152
5	6	10	5	“ 145	11	1 “ 155
5	7	10	8	“ 148	11	4 “ 158
5	8	11	1	“ 155	11	12 “ 166
5	9	11	8	“ 162	12	5 “ 173
5	10	12	1	“ 169	12	13 “ 181
5	11	12	6	“ 174	13	4 “ 186
6	0	12	10	“ 178	13	8 “ 190

"This table reads: A man of 5 ft. 8 in. should weigh 11 st. 1 lb., or 155 lbs., (14 lbs.=1 stone;) he may exceed this by 7 per cent., and so attain 11 st. 12 lbs., or 166 lbs., without affecting his vital capacity; beyond this rate his respiration becomes diminished.

"AGE AS AFFECTING THE VITAL CAPACITY.

"The vital capacity is found to be at a maximum between the ages of thirty and thirty-five, though the effect of age is not very manifest, *until a person has attained fifty-five years, when the capacity diminishes sufficiently to render it necessary to make a subtraction.* This we must do according to the annexed table:

Height.					Mean.		Minimum.
Ft. In.		Ft. In.		Age. 15 to 55	Age. 55 to 65.	Age. 65 to 75.	16 per cent. below mean.
5	0 to 5	5	1	174	163	161	146
5	1 " 5	5	2	182	173	168	153
5	2 " 5	5	3	190	181	175	160
5	3 " 5	5	4	198	186	182	166
5	4 " 5	5	5	206	196	190	173
5	5 " 5	5	6	214	203	197	180
5	6 " 5	5	7	222	211	204	187
5	7 " 5	5	8	230	219	212	193
5	8 " 5	5	9	238	226	219	200
5	9 " 5	10		246	234	226	207
5	10 " 5	11		254	242	234	213
5	11 " 6	0		262	249	241	220

"Thus it appears that a man 5 ft. 8 in., of the mean weight, may be expected to breathe 230 cubic inches until the age of fifty-five, 219 cubic inches from fifty-five to sixty-five, and 212 from sixty five to seventy-five years of age. The vital capacity is somewhat reduced by a moderate meal, and by a full meal 9 to 14 inches.

"In all the foregoing calculations, it is supposed that the patients are dressed in ordinary attire. We therefore have to make no allowance for boot-heels, weight of dress, &c. It may be remarked, however that M. Quetelet estimates the average weight of the clothes, at different ages, as one-eighteenth of the total weight of the male body, and one-twenty-fourth of the total weight of the female. The value of spirometry in life assurance, in the detection of lung disease, is very great."

SPHYGMOGRAPHY AND THERMOMETRY.

Medical writers, both in England and this country, have called the attention of the medical profession and insurance corporations to the value of thermometry and the sphygmograph in clinical observations and the selections of candidates for life insurance. The sphygmograph is described as "an instrument by the use of which the pulsations of the radial artery are represented in diagram. A sensitive lever, armed with a point at right angles to the shaft, is made to move up and down by placing one end of it over the radial pulse, the point is then made to come in contact with a piece of smoked glass or paper, which moves along in front of it. A curved line is therefore written by the moving point upon the moving glass or paper." The pulse is written off as it is called. Pulse writing is another term for sphygmography. In the hands of experts, or those versed in the correct use of the thermometer and sphygmograph, much may be learned in determining the vitality and expected longevity of applicants. When the "waves of circulation" are blunted or distorted, as would be exhibited by the sphygmograph, thereby varying from a diagram indicating a condition of health, the attention of the Examiner would be called to the

probable existence of a cardiac lesion, aneurism, some form of brain disease, or senile degeneration of the arterial system, which would in many cases defy the best skill of the physician to detect by physical exploration. The thermometer, when exhibiting a persistent increase or decrease of the normal temperature of the body would be additional evidence of the presence of a pathological condition which would render the applicant an unsafe risk for the company. According to Dr. Aitken a rise of about 99.5° F., or a depression below 97.3° F., is a sure sign of some kind of disease, if the change is persistent.

HERNIA.

The great liability to strangulation of most if not all varieties of rupture, necessarily renders individuals the subjects of them second class and undesirable risks. Several life companies decline all applicants with rupture, excepting, however, one variety, to wit, *single reducible inguinal hernia*.

Among adults it is estimated that one out of every fifteen persons are ruptured. The existence of hernia, even where a nicely adjusted truss is constantly worn, renders the risk less desirable, and all cases of *double* hernia positively decline, notwithstanding a proper truss may be in use.

Any form of hernia in females will prove ample cause for rejection.

The physician will not forget that operations for the cure of hernia are not always effectual, and that cases apparently cured by irritation of truss, or by the knife, upon absorption of the deposition, are more difficult of cure than at first. Such cases should not be accepted for insurance.

Crural and inguinal hernia are considered more dangerous than umbilical.

Examiners should carefully diagnose each case presented, giving the company the benefit of any doubt which may occur to them regarding the perfect safety of the risk. All cases of rupture should be accurately noted and definitely explained as to variety, extent, etc., upon the application sent to the Home Office.

PREDISPOSITION TO DISEASE.

That persons frequently inherit from parents their constitutional peculiarities, and the morbid tendencies growing out of them, is as apparent as that they resemble them in features, form and traits of character. With the exception of syphilis—in a general sense—"diseases are not inherited, but only those peculiarities of structure or constitution which predispose to them. For instance, infants are not born with gout, rheumatism, calculus, phthisis, etc., but only with those conditions of system which favor the development of these affections, when other causes co-operate." The principal hereditary diseases are syphilis, scrofula, gout, consumption, epilepsy, insanity, cancer, asthma, psoriasis and calculus. In some instances the hereditary tendency is so great that the disease becomes developed, notwithstanding the utmost efforts to prevent it, as is abundantly illustrated in affections of the lungs and brain. The disposition to convulsions, hydrocephalus, idiocy, syphilis and scrofula, is most apparent during the early period of life; to epilepsy and phthisis about the age of puberty; to gout, rheumatism and various nervous diseases, during the years of maturity, and to cancer, asthma and paralysis at chiefly advanced stages of life. The inheritance may proceed from one parent only, or from both. Where from one parent only, the disposition is often slight, with perhaps the exception of phthisis,

and the offspring frequently escape any manifestation of the affection, but where the inheritance is from both parents the case is the reverse, and the safety very greatly diminished.

DISEASES OF THE HEART IN EITHER PARENT.

A predisposition to cardiac disease is readily transmitted to offspring, and where a parent of the applicant has died of such disease, the physician should not fail to exercise more than usual care in his examination, making every effort to discover the presence of disease, and should he entertain a doubt regarding the safety of the risk, the Company expects the benefit of it.

CEREBRAL APOPLEXY.

Predisposition to this malady, by inheritance, is so common that it is scarcely necessary to allude to it here, and the examining physician will recollect that the so called "apoplectic habit," "persons with large heads, short necks, red and turgid faces, full habit of body, and generally of sanguineous temperament" are not the individuals who become subjects of apoplexy, although commonly conceived to be the class most liable to this disease. While it is probable that some persons possessing the above described physical conformation die of apoplexy, by far the largest number of apoplectic patients will be found among individuals who do not possess these characteristics, and, indeed, tall, thin, pale faced persons form a goodly proportion of the victims of this disease. The ages at which the greatest tendency exists are from 40 to 70, and very few cases occur under 25 years of age. Predisposition to apoplexy of any kind of course precludes insurance.

RHEUMATISM.

Persons *subject* to inflammatory or metastatic rheumatism, even where the heart is yet in a perfectly healthy condition, are unfit for purposes of insurance. The excess of fibrin in the blood, which marks this diathesis, often occasioning deposits about the pericardium and valves of the heart, or, in the form of *embolia* obstructing the action of the kidneys or liver, at times ending in fatal disorganization. Occasionally the fibrous deposit becomes detached and circulating in the arteries is carried to the brain, its presence there causing hemiplegia.

Cases of hereditary rheumatism are sometimes encountered in applicants, and under the most favorable circumstances it impairs the risk, to say the least. Syphilitic rheumatism, as well as all other manifestations of syphilis is a sufficient cause for rejection.

SUDDEN DEATHS.

Death, resulting simply from *old age*, without the influence exerted by some diseased condition of the organism, is extremely rare. Nearly every death is the result of disease or accident, and, in case of death from disease, it may occur in two ways,—either *suddenly*, the transition from life to death occurring in a moment and without premonitory sign, or *slowly* and gradually, as the termination of some lingering malady.

“The most frequent causes of *sudden deaths*,” says Thomas Tanner, M. D., of London, “are, apoplexy; rupture of an aneurism or large blood vessel into one of the three great cavities of the body; disease of the valves of the heart—the liability being greater in disease of the aortic valve than in mitral valvular disease; rupture of the heart, from fatty

degeneration; clotting of blood in the heart; laceration of the chordæ tendineæ; asphyxia, from obstruction of the glottis, or the bursting of purulent cysts into the air passages; syncope, from severe shock or alarm; and injury to the head or the spinal cord. As regards the last mentioned cause of sudden death, it must be remembered that as the phrenic nerve arises from the third, fourth and fifth cervical nerves, so any severe injury to the cord above the origin of the third nerve will produce instant death, by suddenly paralyzing the diaphragm and intercostal muscles; while if the injury occurs below the sixth vertebra the patient may live some hours, if not days, although the action of the greater number of the intercostal muscles must be wholly or partially arrested."

"Death as it occurs in disease is usually complicated; but in all cases, whether it take place suddenly or gradually, or whatever may be the malady, it approaches through one of the three vital organs—the brain, the heart or the lungs. Life being inseparably connected with the circulation of arterial blood, death takes place directly the action of the heart is completely arrested; and since the action of the heart is dependent upon the more or less perfect condition of all the vital organs, which stand in a peculiar reciprocal relation to each other, a cessation of the functions of either of the three speedily arrests the remaining two. Thus innervation of the muscles of respiration depends upon the medulla oblongata, the energy of the medulla oblongata upon the decarbonization of the blood, and the decarbonization of the blood upon the circulation and respiration. The force of the heart, if not directly, is indirectly connected with the medulla oblongata, because the circulation of the venous blood destroys the irritability of the muscles. And so it results that failure in any one of the three links in the chain is fatal. Hence

Bichat spoke correctly of death beginning at the head, at the heart, and at the lungs.

"We may have then—1st, *Death by Syncope*, that form which is caused by a want of the due supply of blood to the heart. The deaths from flooding after labor, from the bursting of aneurisms, &c., are good examples of this form; on examining the heart afterwards, the cavities are found empty, or nearly so, and contracted. 2d, *Death by Asthenia*, in which there is no deficiency of the proper stimulus of the heart's action—the blood—but a total failure of the contractile power of this organ. The effects of certain poisons—as hydrocyanic acid, of strong mental emotion, of lightning, a blow on the pit of the stomach, or the head, &c.,—furnish good illustrations of this form. Fatty degeneration and organic disease of the circulatory apparatus in the chest are other causes."

DIMENSIONS OF WHITE MEN.

COMPARATIVE TABLES.

The United States Sanitary Commission published, in 1869, an interesting volume, entitled "Investigations in the Military and Anthropological Statistics of American Soldiers."

The work contains numerous tables giving the measurement of soldiers in a variety of ways. Among the mass of tables are some which exhibit the average weight and chest circumference of many thousand white volunteers and drafted men, classified as to nativity and height. For want of space to devote to tables of the different statures, a selection has been made of such men as were 5 feet 7 inches in height as comprising the most numerous class, and all the men included in the table were natives of the United States. This Table may prove of interest as a means of further showing that the

adult male of American birth is not so inferior to the European adult male, in point of physical structure, as has been asserted, and to confirm, if need be, the remarks of Dr. Fish, giving the result of an examination of 8,700 men by a surgeon of New York city, (see page 24.)

*Table Showing the Average Weight and Chest Measure of 6,565
Native American Soldiers, (White.)*

NATIVITY.	Average Comput'd from	Height.	Weight.	CHEST.	
				After Expira'n	Full Inspira'n
The New England States,	1000 men.	5 ft. 7 in.	140.59	34.00	36.74
New York, New Jer- sey and Penn'a,	3177 men.	5 ft. 7 in.	141.08	34.33	37.09
Ohio and Indiana,	1443 men.	5 ft. 7 in.	141.76	34.98	37.60
Michigan, Wiscon- sin and Illinois,	945 men.	5 ft. 7 in.	141.33	34.94	37.35

The average dimensions of chest, and also the average weight of the men from the New England States, it will be observed, is somewhat less than the average of that of the other States mentioned. Vermont, Maine and New Hampshire would, no doubt, come up to the full average, and perhaps go beyond the figures reached by New York, New Jersey, Pennsylvania and the Western States, if averaged by themselves. A large number of the men included in the average of the New England States were from Massachusetts and Connecticut, and, as a class, less in weight and size of chest for the same height. The average for the New England States is in consequence smaller.

HEIGHT TO WEIGHT AND MEASUREMENT OF CHEST.

Height.	Weight.	Chest.	Height.	Weight.	Chest.
5 ft. 1 inch	120 lbs.	34.06 in.	5 ft. 7 inch.	145 lbs.	38.16 in.
5 " 2 "	125 "	35.13 "	5 " 8 "	148 "	38.53 "
5 " 3 "	130 "	35.70 "	5 " 9 "	155 "	39.10 "
5 " 4 "	135 "	36.26 "	5 " 10 "	160 "	39.66 "
5 " 5 "	140 "	36.83 "	5 " 11 "	165 "	40.23 "
5 " 6 "	143 "	37.50 "	6 " 0 "	170 "	40.80 "

The English Table, (above,) of Weights and Measures is again introduced for the purpose of comparison with that of American Soldiers, and also for comparison with the table below presented.

HEIGHT.	AVERAGE WEIGHT.	AVERAGE CHEST MEASURE.	
		Not Inflated.	Full Inflation.
5 feet 1 inch.	122.33 lbs.	31.91 in.	33.23 in.
5 " 2 "	127.03 "	32.21 "	34.85 "
5 " 3 "	131.54 "	33.00 "	35.52 "
5 " 4 "	135.62 "	33.44 "	35.85 "
5 " 5 "	139.71 "	33.94 "	36.40 "
5 " 6 "	140.84 "	34.00 "	36.74 "
5 " 7 "	142.68 "	34.54 "	37.00 "
5 " 8 "	148.00 "	34.67 "	37.49 "
5 " 9 "	150.12 "	35.11 "	38.00 "
5 " 10 "	155.27 "	35.64 "	38.94 "
5 " 11 "	160.70 "	36.00 "	39.00 "
6 " 00 "	167.21 "	36.78 "	39.87 "

This Table has been prepared with much care and labor, from the Weights and Measures of a large number of adult male applicants registered in the office of this Company, and shows the average weight and average chest measure during the acts of expiration and inspiration. The larger part of

the applicants are natives of this country, and the figures were taken from the books without attempt at selection.

On comparing the English Table with that constructed by this Company, it will be noticed that while the weights average about the same, there is a larger chest capacity for the English Table. It is probable that the measurements and weights for the foreign table were taken from men *selected* for their good physical development, rather than from the general mass of the adult male population, or, that more care was practiced in ascertaining the greatest possible degree of chest inflation.

FEMALE APPLICANTS.

APPLICATIONS upon the lives of females require an extra blank, to be filled out by the Examiner, and which should accompany the application when forwarded. The Company does not accept persons under the age of 14, and *females at that age, or older*, must have menstruated and the menses regularly established before insurance can be effected.

Some companies decline all female applicants for insurance on account of the mortality incident to parturition, particularly with primiparæ and the danger incurred at the climacteric period. Child bearing, and its attendant complications, largely increase the mortality previous to the age of 50. At or beyond this age, cancerous diseases of the breast, uterus, and its appendages, are frequently developed. The Examiner should use great caution in examining and recommending female applicants, and especially those who have attained the age of 40 and upward. Ascertain whether the functions of the uterine system are normal and regular. The *recurrence of puerperal eclampsia*, or mania, as well as miscarriage, or abortion, precludes insurance, unless the female has passed the critical period, (change of life,) and is in good health.

More or less difficulty is experienced in making thorough examinations of females and ascertaining positively regarding their true condition. Very few would permit a digital exploration in cases of suspected uterine disease. The statement of the applicant concerning the existence and extent

of diseases, is in the majority of instances totally unreliable, consequently, if the Examiner suspects the existence of prolapsus uteri, leucorrhœa or any other diseased condition tending to induce enervation, the risk should at once be declined. The same difficulties also exist with regard to chest measurement, the corsets and cotton padding so commonly worn rendering it impossible to correctly ascertain the size and expansion of the chest, as well as preventing an examination of the heart and lungs by percussion and auscultation. The proper method in such cases is to have the padding and corsets removed and the examination made over a light wrapper or other garment. *No false delicacy* should ever prevent the Examiner from instituting the most searching investigation if any suspicion exists in his mind, and the case should be rejected if the necessary examination be refused. An anæmic or chlorotic condition, also indications of the cancerous cachexia exclude of course. In all cases of pregnancy defer the examination until at least *two months after confinement* and the recovery is complete. The pulse of the adult female should range from 75 to 80, or five beats per minute more than that of the adult male. Married females, more especially those who have become mothers, are much more desirable as insurance risks than the unmarried, particularly unmarried women past the age of thirty years.

The following table, by M. Odier, exhibits the relative longevity of married and unmarried females.

At the Age of	A Married Female has to live	An Unmarried Female has to live	Difference.
20 Years, . . .	40 yrs. 4 mos.	30 yrs. 8 mos.	9 yrs. 8 mos.
25 " . . .	36 " 0 "	30 " 6 "	5 " 6 "
30 " . . .	32 " 5 "	28 " 11 "	3 " 6 "
35 " . . .	28 " 11 "	26 " 4 "	2 " 7 "
40 " . . .	25 " 7 "	23 " 5 "	2 " 2 "

An explanation of the table of M. Odier is made by Dr. Milne, in his work on Annuities, which is here quoted. "It is obvious that the best organized and most vigorous individuals of both sexes, but especially females, are the most likely to marry; and that but a small proportion will be married of those (particularly females,) who labor under any infirmity that tends materially to shorten life. The married, therefore, will, upon an average, be a *selection of such lives from the general mass of the population as would have been the best, whether they had married or not*; and it is very difficult to determine what effect marriage may have had in improving them."

The comparative mortality of first and subsequent labors is illustrated by the following exhibit.

Authority.	No. of Primi- paræ.	No. of Deaths	Or one in every	No. of Multi- paræ.	No. of Deaths	Or one in every
Hardy & McClintock.	2,125	35	60	4,510	30	150
Mathews Duncan, ..	3,722	50	74	12,671	103	123
Johnson & Sinclair, .	4,535	83	54	9,213	80	115
Totals,	10,382	168	62	26,394	213	124

Table showing the Mortality from Puerperal Fever in different Pregnancies.—MATHEWS DUNCAN.

No. of Pregnancy.	No. of Mothers.	No. of Deaths.	Per cent. of Death.	Or one in
First,	2,253	97	4.30	23
Second to Fourth,	4,031	85	2.11	47
Fifth to Ninth,	1,563	47	3.01	33
Tenth to Nineteenth, . . .	189	9	4.76	21

CAUSES FOR REJECTION.

THE Home Office reserves the right to reject any or all applications presented, and in no instance are the Examiners of this Company to construe the rejection of risks, recommended by them, as in the least reflecting upon their judgment, capacity, or honesty, professionally or otherwise.

1. Where both parents have died of phthisis pulmonalis the risk should *invariably* be declined.

2. Where one parent has died of consumption, and it has also appeared in brother or sister of the applicant, unless the applicant exhibits a sound and healthy condition and possesses a good physical development, and has already attained the age of thirty-five years.

3. Where the party has been or is affected with paralysis, apoplexy, epilepsy, hereditary insanity, loss of sense and voluntary motion, or symptoms denoting softening of the brain, shuffling gait, and rapid tendency to obesity or emaciation, complete deafness or blindness, also cataract, (unless removed by operation.)

4. Intermissions or irregularities in the action of the pulse or heart, abnormal sounds or symptoms of hypertrophy, dilatation, or valvular lesions, aneurisms, ossification of the blood

vessels, habitual cough, difficulty of breathing from asthma or any other cause, hæmoptysis, dropsy and bronchitis.

5. If the pulse is above 88 after due rest and repeated trials, and where the pulse is below 58, sitting, unless explained by idiosyncrasy or personal peculiarity.

6. All diseases of the digestive organs materially affecting the applicant's health, open ulcers, obstinate cutaneous affections, psoas or lumbar abscess, coxarius morbus, unless a long period has elapsed since recovery, scrofula, frequent attacks of erysipelas and colic, extensive varicose veins, chronic enlarged or indurated lymphatic glands, fistulæ in ano or perineo, irreducible hernia, double hernia, gout, metastatic rheumatism, syphilitic rheumatism, and where applicant is subject to attacks of inflammatory rheumatism, pneumothorax and emphysema.

7. Destructive diseases of the bones, necrosis, disease of the spine or joints, spinal curvature, chronic nephralgia, nephritis, Bright's disease, gravel, calculi, chronic cystitis, permanent stricture, diabetes, enlarged prostate where it affects free discharge of urine, Addison's disease, secondary and tertiary syphilis, also amputations at the shoulder joint or above the knee.

8. All cancerous or malignant diseases, even when doubtful or suspicious, including those of the stomach, intestinal canal and rectum, tumors, carbuncle, chronic diarrhœa, delirium tremens.

9. In cases where puerperal fever or mania has *recurred*, the risk must be declined, unless the applicant has safely passed the climacteric period. Vesico-veginal or rectal fistulæ or laceration, phlegmasia dolens, prolapsus uteri, leucorrhœa,

(if excessive,) emaciation and exhaustion from lactation. Also pregnancy. While any of these conditions are present the risk must be declined.

10. In all cases where, in the opinion of the Examiner, the risk is not a desirable one for the Company to insure, or in cases where the physician has reason to suspect the truthfulness or honesty of the applicant, and where he has a well founded doubt whether the applicant will reach his expectation of life, it is his duty to decline the risk.

11. Decline all applicants who have had three severe attacks of pneumonia. Such individuals not infrequently succumb to phthisis.

HEALTH AND LIFE,

AS

INFLUENCED IN THE UNITED STATES BY CLIMATOLOGICAL
AND TOPOGRAPHICAL CONDITIONS.*

THE following statistics, illustrating the relative salubrity of the different sections of the United States, are derived chiefly from the Eighth Census Report, to which also its terminology and classification of diseases are mainly conformed.

While the returns from every section are defective, they are acknowledged to afford a tolerably fair statement of comparative mortality, and especially of the ratio of deaths from particular diseases.

The two tables that I present, afford a summary view of the relative salubrity of different sections; and the explanations appended are sufficient for a full understanding. The only territorial divisions common to the two tables are the High Interior and the Pacific.

The reader should remember that a comparison, extending through a considerable number of years, is necessary to obtaining exact results. But, though another census may change considerably the ratios of individual States, it can

* This article is kindly contributed by Prof. H. P. GATCHELL, M. D., of Oak Grove Sanitarium, near Kenosha, Wis.

not greatly modify the results for large sections, unless for those composed of new States and Territories; the rate of mortality being, in general, less in new and sparsely peopled than in old and densely peopled States, presenting similar climatological and topographical conditions. The mortality is usually much greater in cities than in the country. The greatest mortality occurs at the extremes of life, especially at its commencement.

Excessive heat is more fatal to the white race than excessive cold, at least within the limits of the temperate zone. Humidity of atmosphere aggravates the effects of both heat and cold. The most humid regions are those in the vicinity of the Gulf, of the two oceans and of the lakes, particularly the southern and eastern shores of the latter. The driest region is the high interior.

TABLE FIRST.

Ratio of Mortality to every Ten Thousand People.

LOCALITIES.	1860.	1850.	Average
Lower Mississippi Valley,	181	238	204 $\frac{1}{2}$
Atlantic Lowlands,	134	145	139 $\frac{1}{2}$
Intermediate Region,	132	119	125 $\frac{1}{2}$
High Interior,	126	192	159
Extreme Northeast,	124	125	124 $\frac{1}{2}$
Alleghany Region,	108	96	102
Extreme Northwest,	98	101	99 $\frac{1}{2}$
Pacific Coast,	95	92	93 $\frac{1}{2}$

EXPLANATION.

The Lower Mississippi Valley comprises Louisiana and a breadth of two counties along each bank of the river, as far North as Cape Girardeau, in Missouri.

The Atlantic Lowlands comprise a general breadth of two counties along the coast, from Delaware to Florida, inclusive.

The Intermediate Region comprises the country extending from the Alleghanies to the Lowlands of the Atlantic on the East, and to those of the Mississippi on the West.

The High Interior comprises New Mexico and Utah.

The Extreme Northeast comprises Maine, New Hampshire and Vermont.

The Alleghany Region extends from Pennsylvania through Virginia, East Tennessee, &c., to North Alabama.

The Extreme Northwest comprises Wisconsin, Iowa and Minnesota.

The Pacific Coast comprises California, Oregon and Washington.

The Lower Mississippi Valley, with its alluvial soil, great heat and moisture, will always present a large ratio of mortality. The influence of these causes is not limited to the immediate vicinity of the river, but extends throughout the neighboring States. While the mortality from consumption is small, that from fevers and inflammations is so large as to render it very unfavorable to health and life.

The Atlantic Lowlands consist of alluvial valleys, swamps and pine barrens, the latter being characterized by salubrity; but there is a sufficiency of the two former to generate a large ratio of febrile and inflammatory diseases, notwithstanding that the heat is tempered by the neighborhood of the ocean. It is due in part, perhaps, to the influence of the ocean that the mortality is much less than that of the Missis-

issippi Valley in corresponding latitudes. As in that region, so in this, consumption is but little prevalent.

The Intermediate Region, in general productive and salubrious, is not so much characterized by marked exemption from or liability to any particular diseases, as by a moderate liability to all. There is, however, a larger ratio of bronchitis, scrofula and diseases of the bones than in most other sections of the country. The climate is very variable.

The High Interior is, in all probability, a decidedly salubrious region. The ratio of mortality is considerably increased by the great number of deaths from violence in New Mexico, where the majority of the population existed at the Census of 1860. It is not so much characterized by the prevalence of any particular diseases as by its marked exemption from consumption. The climate is subject to great extremes. It is not uncommon for the mercury to fall 40° or 50° between noon and midnight. But the singular dryness of the air causes this great fluctuation to be felt much less than in lower and more humid regions.

The Extreme Northeast probably furnishes more full returns than most other sections, and thus increases unduly the comparative ratio of mortality. Its liability to fevers and inflammations is but moderate, but the mortality from consumption exceeds that of any other section. The climate is rigorous but invigorating.

The Alleghany Region has always been noted for its salubrity. The country lying on the Western slope of the Alleghanies, and between them and the Blue Ridge, is unsurpassed if not unequaled, in this respect, by any other long settled portion of the United States. And this salubrity increases, according to the Census of 1850, from the Pennsylvania line

to the 34th parallel of latitude, in Georgia. There was a mortality to the ten thousand of 103 in Middle and Western Virginia, of 84 in East Tennessee and Western North Carolina, and of 69 in Georgia, between its Northern line and the 34th parallel.

It is not characterized by the prevalence of any particular diseases, but is most noted for the small ratio of consumption in its Southern portion. The deaths from consumption were 99 in the thousand in Middle and West Virginia, 66 in East Tennessee, 33 in Western North Carolina, and 28 in Northern Georgia. While the winters are not severe, the summers, especially in the Southern portion, are, for the latitude, remarkably cool and pleasant.

The Northwestern States present a very small ratio of mortality. This is due, in part, to the fact that they have been recently settled by a vigorous people, many of whom are in the prime of life; but it is due, also, to the extraordinary salubrity of the country. Nowhere else in the United States, if in the world, is there so healthful a region, including so great an area as the belt between the 42d and 49th parallels of latitude, extending from Lake Michigan to the Cascade Mountains, if not to the Pacific coast. And yet a great contrast exists between the climate of the Eastern and Western portion of this belt, the latter being characterized by great uniformity of temperature, as the former is by great extremes of heat and cold, somewhat tempered in the immediate vicinity of the lakes.

The superior salubrity of the Northwest is made conspicuous by a comparison of Wisconsin and Vermont in the same latitude.

	1850.	1860.	Average.
Wisconsin,	97	93	95
Vermont,	102	108	105

But the difference in salubrity does not fully appear in the foregoing statement. Not only is Wisconsin not the most salubrious of the Northwestern States as Vermont is of the Northeastern, but there is a considerably greater proportion of children in the former than in the latter, so that with equal salubrity, the ratio of mortality should be greater instead of less in Wisconsin than in Vermont.

In consequence of the dryness of the atmosphere, it has a small ratio of consumption for a Northern latitude.

The Pacific Coast, like the Northwest, presents a very small ratio of mortality, due partly, as in the latter region, to the vigor which pertains to the recent immigration. The very small proportion of children also in California, where the great mass of the Pacific population is found, tends still further to reduce the ratio of mortality. With the lapse of time, it will probably present a larger ratio than the Northwest, especially as its hot interior valleys, comprising a large portion of its habitable area, are exceedingly subject to fevers. The ratio of mortality from consumption* also equals and probably exceeds that of the corresponding latitudes on the Atlantic coast; but it is remarkably exempt, on the coast, from the more active inflammatory diseases of the lungs. This is due, no doubt to the singular equableness of the temperature of this region.

* Oregon reports a less ratio than California; but the population is too small and too recent to make the returns valuable. The probability is that its extremely humid winters will generate not a little consumption.

TABLE SECOND.

MOST PREVALENT DISEASES.

NORTH.	SOUTH---Continued.	NORTHEAST.
Cancer, Apoplexy, Epilepsy, Paralysis, Consumption, Heart, Hepatitis, &c., Diabetes, Urinary Organs.	Teething, Worms, Skin, Heat.	Cancer, Consumption, Disease of Throat, Apoplexy, Epilepsy, Hydrocephalus, Diseases of Brain not specified, Insanity, Cholera Infantum, Urinary Organs.
EAST.	WEST.	NORTHWEST.
Cancer, Apoplexy, Paralysis, Asthma, Consumption, Heart, Urinary Organs.	Tetanus. Bronchitis, Pleurisy, Pneumonia, Quinsy, Fever, Intermittent, " Remittent, Gastritis, Fever, Puerperal,	Convulsions, Enteritis, Fever, Puerperal,
MIDDLE.	HIGH INTERIOR.	SOUTHEAST.
Bronchitis, Scrofula, Bones and Joints.	Fevers, Erysipelas, Childbirth, Violence.	Fever, Typhoid, Dropsy, Asthma, Fever, Puerperal,
SOUTH.	PACIFIC.	SOUTHWEST.
Dropsy, Tetanus, Asthma, Bronchitis, Pleurisy, Pneumonia, Quinsy, Fever, Intermittent, " Remittent, " Yellow, Dyspepsia, Gastritis.	Fever, Remittent, Scarlatina, Small Pox, Syphilis, Fever, Infantile, Apoplexy, Hydrocephalus, Diseases of Brain not specified, Asthma, Enteritis, Childbirth, Suicide.	Dropsy, Fever, Intermittent, " Remittent, " Yellow, Diseases of Brain not specified, Tetanus, Pleurisy, Pneumonia, Quinsy, Disease of Throat.

EXPLANATION.

Of diseases, some are very much and some are very little influenced by climate. I have aimed in this table to present those that are in a great degree determined by meteorological and topographical conditions, though habits of life have much to do with liability to and immunity from most diseases.

This is especially true with regard to chronic diseases of the nervous system, and in some degree those of the heart; these two classes, particularly the former, being greatly increased by the vicissitudes of commerce, and by anxiety incident to the struggle for subsistence in the more densely peopled portions of the country.

NORTH.

Diseases of the nervous system, heart, liver and urinary organs, together with cancer and consumption, predominate in the North. There can be but little if any doubt of the climatic origin of the most of these, and that they are due in a great measure to the influence of cold, or of cold and moisture combined. To what extent the chronic diseases of the heart, and more particularly of the nervous system, may be caused by greater intensity of competition in the more densely peopled States, and by the reverses of fortune that attend on commerce and manufactures, would require careful study to determine; but these causes must be largely operative. The ratio of fevers and inflammations is comparatively small in the North.

EAST.

Comparison of the East with the West exhibits a contrast very similar to that between the North and South. It suggests again the importance of habits of life, as well as of climate. As the characteristic diseases are chiefly of a chronic character, it also raises the question how much the exemption of the West may be due to the greater vigor and youthfulness of the immigrant population.

MIDDLE.

Though bronchitis prevails more in the warm South than in the colder North, yet its predominance is found to be in

the Middle Region, where Northern and Southern climates contend for mastery.*

SOUTH.

The influence of heat is conspicuous in the prevalence of fevers and of the inflammatory affections of the respiratory and alimentary apparatus. Tetanus is due to irritability of the nervous system, induced by heat and moisture. Dropsy is probably caused by poverty of blood and by chronic hepatic diseases, since diseases of the heart and kidneys are less prevalent than at the North. Diseases of the skin, inducing carbuncles, ulcers, fistulæ, &c., are in very great excess at the South, being eleven times as numerous at the Southeast as in the Northeast, and nearly six times as numerous in the Southwest as in the Northwest. The ratio of deaths from consumption is small, being about fifty in the thousand for the Gulf States.

* It is interesting to notice how a bold assertion comes to be repeated and at length to be generally accepted on the strength of the repetition. Few persons trouble themselves to inquire into the evidence in favor of any generally accepted proposition.

Through a gross mistake in the confounding of a parasitical disease in the hog with scrofula in man, it was assumed by physicians that scrofula resulted from eating the flesh of the hog. The error has disappeared from among intelligent members of the profession whence it was derived, but it still lingers among the people. It is quite common to hear the prevalence of scrofula in the Middle Region attributed to the excessive consumption of pork, in ignorance of the fact that the disease is no more prevalent in the South than in the North, though pork is quite as much eaten in the Southern as in the Middle Region. In England and Scotland, where comparatively little pork is eaten, scrofula causes more deaths by fifty per cent. than in our Southern States. It is probable that the eating of fat tends to prevent both scrofula and consumption.

WEST.

The West presents decided analogies with the South, as does the East with the North. The similarity between West and South is due, probably, to the great summer heat of the Mississippi valley. Here, as in the South, a high summer temperature is prolific of fevers;* while the sharp vicissitudes of autumn and winter acting on systems previously subjected to great heat, are productive of inflammatory diseases of the lungs. Consumption diminishes with increase of temperature and dryness, the more acute diseases of the lungs, as in the South, in part taking its place.

HIGH INTERIOR.

The returns of 1850 and 1860 are so discrepant with regard to this region that we hesitate to trust, or how much to trust, either. The Census of 1860 assigns a large ratio of fevers to New Mexico, and of diseases of the digestive organs to Utah. Traumatic erysipelas characterizes the dry interior, generally, as far East as Kansas. But what particularly distinguishes the High Interior is the small ratio of respiratory diseases, and especially of consumption. In regard to exemption from this latter disease, it is rivaled only by the Southern portion of the Alleghany Region, and by that it is possibly surpassed. I am of the opinion that with an improved condition of the population of this region, it will rank among the salubrious sections of the country, though its Southern portion will always be more subject to fevers and will prove less healthful than the Northern.†

* The mortality from this class of diseases was, in 1860 greater, in Kansas than in any other State.

† Altitude is generally unfavorable in asthmatic cases, if associated with cardiac diseases.

PACIFIC.

Our Pacific territory extends through seventeen degrees of latitude; but this implies much less diversity of climate than would be supposed. One may set out from Point Conception and, traveling North through twenty-five degrees of latitude, may maintain the same summer mean, that of 60° , yet on moving East three hundred miles, he will find himself in a summer of 90° . Traveling East from San Francisco half that distance, he will exchange a summer of 60° for one of 85° . The interior accordingly is very much subject to fevers, from which the coast is comparatively exempt, as it is also from acute inflammatory diseases.

The prevalence of consumption is greater than on the Atlantic coast in similar latitudes. Scarlatina, small pox and syphilis have proved very destructive, and infantile fever, (regarded as a kind of typhus,) is unusually fatal. Nor is the larger ratio of mortality from diseases of the nervous system to be attributed solely to the reverses incident to mining. The climate engenders a remarkable irritability of the nervous system. People feel as if under the influence of some stimulus, and they hurry on until they suddenly give way and die. The very small ratio of mortality on this coast is due in part to a cause common to newly settled regions, the vigorous character of the immigrants and in part to the very small number of children, less in California, where the mass of the population was in 1860, than anywhere else in the United States. There is no likelihood of its small ratio of mortality being maintained.

NORTHEAST.

In this region we find those diseases most prevalent which characterize the North and the East, and here they are more

intense. Fevers and acute inflammations are comparatively rare, intermittent fever being almost unknown. The climate is rigorous and humid.

NORTHWEST.

But few diseases characterize this region. Convulsions, (a disease chiefly of children,) and puerperal fever are more fatal than in any other section.

SOUTHEAST.

It is somewhat singular that the warm, humid Southeast should, like the dry, hot and cold Northwest, be characterized by excessive mortality from puerperal fever. That asthma and typhoid fever prevail is not unexpected.

SOUTHWEST.

In this exceedingly hot and humid region, the diseases that characterize the South and West, manifest themselves in the the greatest intensity. It is pre-eminently the home of fevers and of highly inflammatory diseases. Here also pleurisy and remittent fever rage almost without a parallel. Tetanus and inflammation of the brain, too, are very fatal. The mortality from consumption, as in the South generally, is small.

CONCLUSION.

Influenza, rheumatism,* neuralgia, diarrhœa and dysentery,

* And yet rheumatism originating in a damp is generally mitigated by transference to a dry climate. Even a removal from the lake side of Chicago to the prairie side, is not without effect. So is a difference discoverable between the village of Kenosha and the place where I now reside, three-quarters of a mile from the lake shore, in regard not only to rheumatism, but to neuralgia, pharyngitis, bronchitis and other diseases affected by damp, chilly air. This may be due in part to protection by a sand ridge.

according to the census of 1860, are but little influenced by climate; though, according to the Census of 1850, there was a pretty regular decrease of dysentery from North to South.

The greatest mortality from diseases of the respiratory apparatus occurs in the Winter and Spring, from fevers and diseases of the alimentary apparatus, in Summer and the early part of Autumn. Diseases of the urinary organs are most fatal in the Winter, of the liver in the Spring. More infants die in hot, more old people in cold weather.

The greatest number of old people* is found in the Northeast, though the ratio but little exceeds that of the Middle Atlantic States, from Delaware to North Carolina inclusive, less, probably, than the excess of little children, in the latter region, to the whole population. I am confident that the Northwest will yet be found more favorable to long life than the Northeast. The large immigration from the Northeast, like that of the Northwest, is composed mostly of the young and middle aged.

It should not be inferred that an invalid will improve on migrating to a region which is comparatively exempt from his particular disease. In some cases, such regions should be especially avoided. Sometimes relief may be found in sections where the particular disease is equally or even more prevalent. There are idiosyncrasies of disease as well as of individuals. I expect at no distant day to point these out.

As previously intimated, it is not to be expected that the order of salubrity, as indicated in Table First, will be exactly maintained. I will hazard and embody in a table a conjecture as to relative insalubrity, so far as determined by permanent conditions.

* Of our political divisions, New Mexico reports, by far, the largest ratio of very old people.

1. Lower Mississippi Valley.
2. Atlantic Lowlands.
3. Intermediate Region and entire Northeast.
4. Pacific States and High Interior.
5. Entire Northwest and Alleghany Region.

That the Lower Mississippi Valley will always prove the most insalubrious section of our vast and varied country there can be no doubt, any more than that the Atlantic Lowlands will rank next. It is impossible to determine whether the Intermediate region or the Northeast is the more salubrious; but as the Northeast has a much larger city population, and as it has probably given more full returns, I place the Intermediate Region first in the line, to indicate that it is likely to prove the less salubrious region of the two.

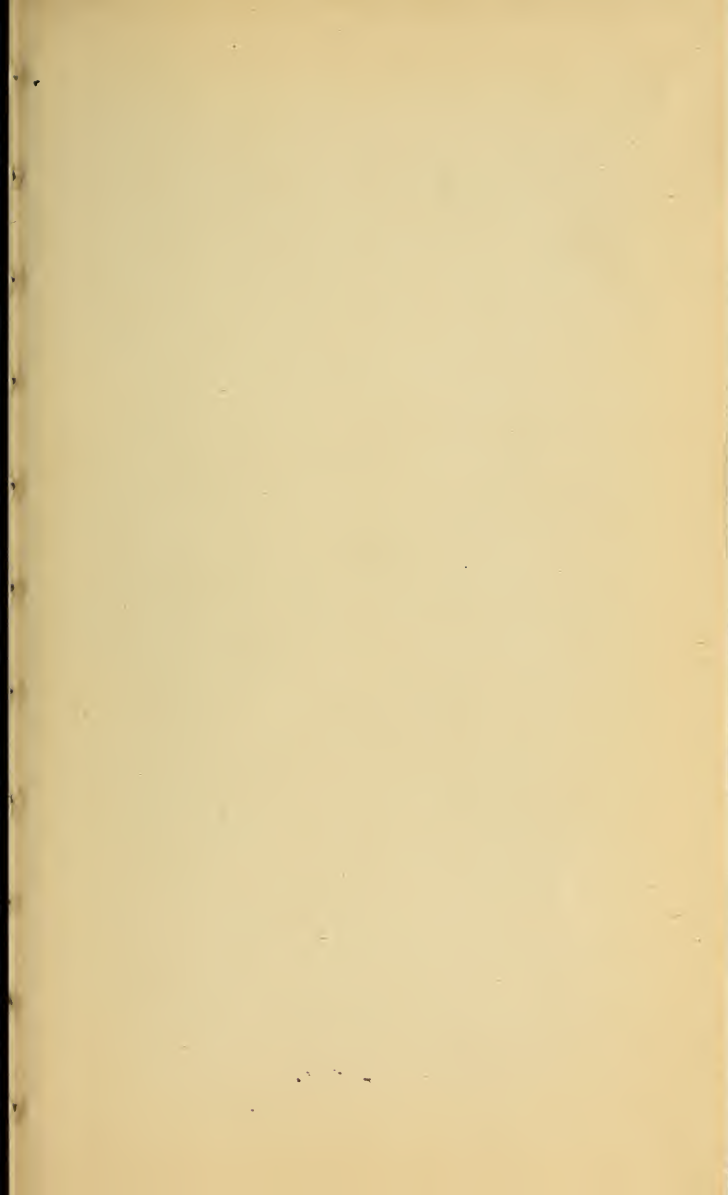
It is equally difficult to determine between the Pacific States and the High Interior; but as the interior valleys of California are very insalubrious, and as the Northern portion of the High Interior is very favorable to health, I have placed the Pacific States first.

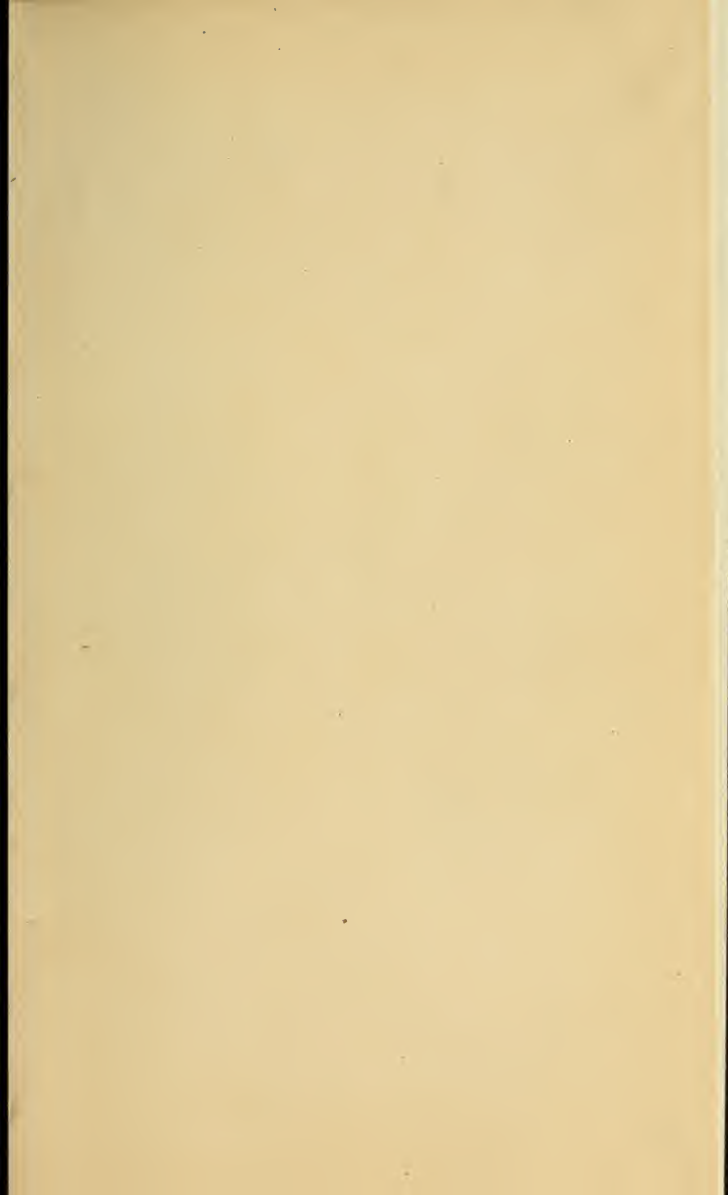
It is equally difficult to decide between the Northwest and the Alleghany Region. But since the latter has been much longer settled, and since the habits of the people are less favorable to health and life than in the Northwest, I have concluded to place the Alleghany Region last, as the most salubrious.

I N D E X .

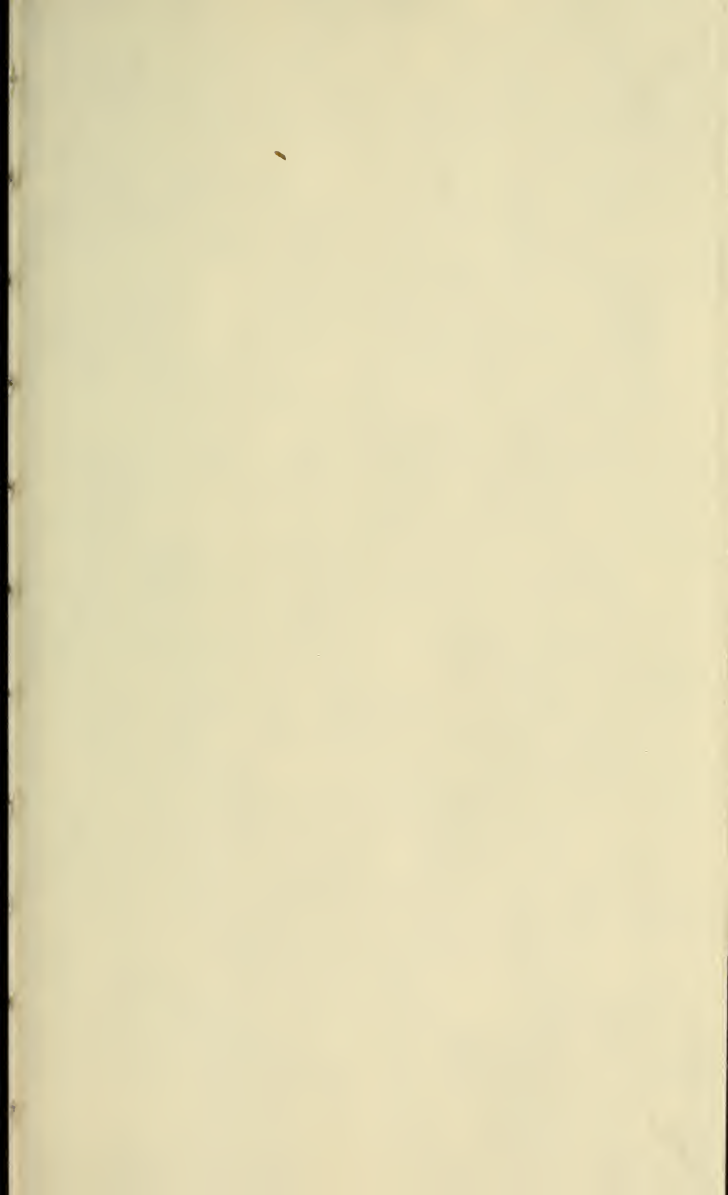
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